Low back pain in young people - Cross-sectional study in Lisbon

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Introduction

Low back pain (LBP) in young and adolescent people is a common but benign event and is constituted as the result of interdependent risk factors which need to be identified for reasons of prevention and rehabilitation [1,2 ,3 ,4]. The non-specific low back pain has a multifactor etiologic origin that affects a considerable part of the population. It can have serious repercussions on different levels (functional, psychosocial and social-economical), and the juvenile population is special and frequently affected [5, 6, 7] with results of prevalence LBP varying between 12% [8] and 57% [9] with de same of occurrence pattern of the adults. [3,10]. There are a lot of risk factors involved on young back pain – biomechanical, anthropometrical and psychosocial – and the present problematic may have to be seen in a multidimensional perspective, involving multiple elements in constant and reciprocal interaction.

Material and Methods

Objectives: To determine the prevalence of self-reported (current and one-year recollection) low-back pain and its patterns in children and adolescents (between 10 and 18 years), inhabitants in the greater Lisbon area.

Study Design: Epidemiological, retrospective, cross-sectional, descriptive and correlative study, survey style based on a previously validated questionnaire. We defined “Low back pain as any pain from the lower back region felt at during least 24 hours”.

Population Sample: The sample was acquired by convenience in eight Secondary Schools in the greater Lisbon area (one per district) comprising by 1139 young - 575 boys and 564 girls - with a homogeneous distribution in the main variables (age,

sex, with and without sports activities). The sample was normally distributed with respect to age (14,37 ± 2,21 years).

Procedures: The questionnaire included was previously validated by international experts, apart from personal data, questions concerning psychosocial factors, physical activity, leisure time activities, visual analogue pain scales and some characteristics of low back pain (age of first incidence; frequency, duration; intensity, daily activities and back pain and evolution of the condition). We distributed 1300 questionnaires and collected 1173 questionnaires (90,2% response rate). However, 34 responses were not included while being incomplete. Therefore, 1.139 valid questionnaires (87,6%) of were treated for statistical analysis.

Results and discussion

One-year recollection prevalence of self-reported low back pain and its the main results are represented in table 1

Table 1. Young people with and without self-reported annual low back pain and its distribution by sex, age and sport activities

n=1139	Male (575)	Female (564)	10 to 14 ys (543)	15 to 18 ys (596)	Sports (788)	No sports (351)
With LBP (1997) (n=446) Prevalence = 39,2%	185 32,2%	261 *46,3%*	172 31,7%	274 *46,0%*	309 39,2%	137 39,0%
Without LBP (1997) (n=693) Prevalence = 60.8%	390 67,8%	303 53,7%	371 68,3%	322 54,0%	479 60,8%	214 61,0%

The prevalence of low back pain was 39,2% (n=446) and was significantly higher in girls (46,3%) than in boys (32,2%) ($p<.05$). The prevalence of low back pain increased with age: from 31.7% in young people (10-14 years) to 46% in older adolescents (15-18 years). These data confirm the results obtained by other authors [1,2 ,3 ,4 ,5, 7,9, 10].

The prevalence of low back pain of young people involved in sports (39,2%) did not differ significantly from those not involved in sports (39% - $p>.05$).

In children involved in sports and physical activity for more than 14 hours a week, a significantly higher prevalence of back pain (53,7% - $p<.05$) was found in comparison to the population mean. Girls with low back pain were significantly older

than the girls without back pain ($p<.05$); this was also the case for the boys. Boys with low back pain performed more weekly hours of sports and physical activity than boys without back pain ($p<.05$).

Present prevalence and cumulative prevalence of self-reported low back pain: One hundred and thirteen children (9.9%) reported having back pain at the time of questioning. However, boys (6,8%) reported less low back pain the day before and at answering of the questionnaire than girls (13,1%). In adolescents (15-18 years) this "present point" was greater (11,1%) that in the young (10 to 14 years - 8,7%).

The cumulative prevalence of low back pain reached 51,2% (n=583) and was higher in girls (57,1%) and older adolescents (57,2%) than boys (45,4%) and the young (44,6%).

The tobacco habits and number of hours/week watching TV or playing electronic and or computer games didn't related significantly with self reported LBP ($p>.05$)

Occurrence patterns of Low Back Pain

In 446 young people who reported LBP in one-year we tried to characterize its occurrence pattern. In 59% of cases they reported the first back pain between 10 and 14 years and 8,7% they didn't remember or answer to the question (which age you feel first time LBP).

Almost 3 in each 4 cases (n= 323 and 72%) the worst back pain happened in last 6 months: That seems good in studies like cross-sectional, where the memory and cooperation of the subjects is essential, for describe the effects and the evolution of back pain.

The intensity of LBP in worst moments was measured by Visual Analogue Pain Scale (V.A.S.). We found values from 3 mm to 100 mm (maximum), and in 57% of suffers (n=254) a intensity of back pain was reported less 50. Anyway, we had 31% of" "back pain subjects" who classified worst LBP between 50 and 74 mm and 10% reported a pain between 75 and 100.

In seven each 10 cases the LBP resolved in 1/2 days, but in 18,4% LBP suffers reported back pain during 3 to 7 days or 8,7% had back pains until 1 month. This means that at least one each four young people have LBP during 3 or more days.

The daily activities interfering with low back pain were: carrying school bags and weights (56,3%); bending forward (40,6%); playing sports (40,4%) and being seated (30,9%).

LBP was not associated to the traumatic factors (82%) and in 27% of cases the young people looked for an advice from health professional (27%) or did treatment (31,4%).

Fourteen percent became back pain "sufferers" with worsening of the initial status. In most cases the back pain was "a benign" situation, resolving spontaneously within two days, but at least one in four sufferers sought external help (e.g. physical therapy, medical consultation).

We found a positive correlation between the intensity of worst LBP and: a) the duration of episode ($\chi^2 = 103.9$ is significantly for $p < .001$); b) the need for consultation or treatment ($\chi^2 = 44.8$ is significantly for $p < .001$); c) a "poor" evolution with a recurrent episodes or chronic situations ($\chi^2 = 43.6$ is significantly for $p < .001$).

We found also a positive correlation between the duration of worst LBP and the need a external help. ($\chi^2 = 47.0$ is significantly for $p < .001$). When LBP didn't resolve in a couple of days the young people looked more for an advice and/or treatments.

The young suffers who the condition was not resolved (recurrent pains i.e.) looked more for an advice ($\chi^2 = 227.1$ is significantly for $p < .001$).This condition was more significantly in older adolescents ($\chi^2 = 6.3$ is significantly for $p < .05$).

The complaints observed in this study have patterns comparable to those found in adults and already reported by other studies [1,2 ,3 ,4 ,5, 7,9, 10].

Conclusions

Non-specific low back pain is a common complaint in the young and is more prevalent in older adolescents and female. Non-specific LBP in children is a common event and it should be understood as a "normal experience of life", dependent of multiple risk factors.

Health and Education Professionals have to know more about the protection factors associated the low back pain in young people, must promote risk factors management and despite early the first troubles for to have an important role in prevent chronic and/or recurrent back pains and its handicapped.

We recommend a longitudinal cohorts studies and a new studies about psychosocial, socio-cultural factors, life styles and its relations with back troubles in young people.

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